

APPENDIX B

LOW NOX REBUILD PROGRAM REQUIREMENTS

Note: This is not a legal document and is not intended to represent the minor manufacturer-specific requirements in the individual Consent Decrees/Settlement Agreements. This appendix is intended only to help clarify the Low NOx Rebuild Program requirements. Text set within [] is descriptive and not included in the Settlement Agreements.

Low NOx Rebuild Program

64. Each engine manufacturer shall implement, in accordance with this Section, a program to reduce NOx emissions from an engine manufacturer's Low NOx Rebuild Engines (as defined below) through certain software and/or minor hardware changes made to the engines through the use of a Low NOx Rebuild Kit. The term "Low NOx Rebuild Engines" means: an engine manufacturer's Model Year 1994 and later MHDDE and HHDDE Pre-Settlement Engines if an engine manufacturer elects Option A below; or Model Year 1993 and later MHDDE and HHDDE Pre-Settlement Engines if an engine manufacturer elects Option B below, but shall exclude, in either case, an engine manufacturer's low-volume ratings representing not more than ten percent in the aggregate of the total volume of MHDDE and HHDDE Pre-Settlement Engines manufactured during the applicable Model Years to avoid requiring unique calibrations or other modifications for such ratings where it would be unduly burdensome in relationship to the number of engines involved and the expected emission reductions.

65. Within 90 days of the Date of Filing, each engine manufacturer shall submit to the ARB and the United States, for review and approval by each, a single plan for the implementation of its Low NOx Engine Rebuild Program in California. Each Low NOx Rebuild Kit designed and developed by an engine manufacturer shall meet the emission limits under either Option A or Option B:

Option A:

for MHDDEs only:

(a) EURO III Composite Value Limits for NOx of 6.0 g/bhp-hr for Model Years 1994-1998 engines, 1.0 times the applicable California standards for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with [the technical requirements described in] Appendix C of this Settlement Agreement, and the associated Emissions Surface Limits specified in that Appendix;

(b) an NTE Limit for NOx of 7.5 g/bhp-hr for Model Years 1994-1998 engines.

for HHDEs only:

(c) EURO III Composite Value Limits for NO_x of 7.0 g/bhp-hr for Model Years 1994-1998 engines, 1.0 times the applicable California standards for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with [the technical requirements described in] Appendix C of this Settlement Agreement, and the associated Emissions Surface Limits specified in that Appendix; and

(d) an NTE Limit for NO_x of 8.75 g/bhp-hr for Model Years 1994-1998.

Option B:

for MHDEs only:

(a) EURO III Composite Value Limits for NO_x of 6.5 g/bhp-hr for Model Years 1993-1998 engines, 1.0 times the applicable California standards for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with [the technical requirements described in] Appendix C to this Settlement Agreement, and the associated Emissions Surface Limits specified in that Appendix;

(b) an NTE Limit for NO_x of 8.1 g/bhp-hr for Model Year 1993-1998 engines.

for HHDEs only:

(c) EURO III Composite Value Limits for NO_x of 7.5 g/bhp-hr for Model Year 1993-1998 engines, 1.0 times the applicable California standards for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with [the technical requirements described in] Appendix C to this Settlement Agreement, and the associated Emissions Surface Limits specified in that Appendix; and

(d) an NTE Limit for NO_x of 9.38 g/bhp-hr for Model Year 1993-1998 engines.

66. If, prior to or after submission of a plan pursuant to Paragraph 65 [in some Settlement Agreements 65A], an engine manufacturer determines that it cannot meet the applicable limits specified in Paragraph 65 [in some Settlement Agreements 65A], for any HDDE individual engine rating (referred to in this Paragraph as a “subject rating”) with software and/or minor hardware changes, it shall submit to the ARB and the United States, for review and approval by each, a single alternative or revised Low NO_x Rebuild Plan in accordance with this Paragraph. The alternative or revised plan shall state the NO_x emissions that it proposes to achieve for each subject rating and shall describe how an engine manufacturer will offset a NO_x emission limit higher than the limits in Paragraph

65 [in some Agreements 65A], within the same class of engines subject to the Low NOx Rebuild Program. An engine manufacturer may elect to use a production-weighted average approach within the applicable HDDE class (i.e., HHDDE or MHDDE) to demonstrate compliance with the applicable limit specified in Paragraph 65 [in some Settlement Agreements 65A]. The NOx production-weighted average shall be calculated by multiplying the NOx emission level that will be achieved for each rating through the use of the appropriate Low NOx Rebuild Kit by the production volume for the rating, summing those terms, and dividing by the total production Low NOx Rebuild Engines. Each engine manufacturer's alternative or revised plan submitted pursuant to this Paragraph shall demonstrate that each engine manufacturer's Low NOx Rebuild Kits would, on a production-weighted NOx average basis, achieve the applicable limits specified in Paragraph 65 [in some Settlement Agreements 65A]. As an alternative, if an engine manufacturer contends that any individual rating cannot meet the applicable limits, it may elect to increase the quantity of engines included in the Low NOx Rebuild Program by including portions of earlier Model Year engine families, such that the product of the quantity of additional engines and associated NOx reduction shall be equivalent to the product of the quantity of engines for the subject rating from the original Low NOx Rebuild Plan and the NOx exceedance for that rating.

67. In addition to software and/or minor hardware needed to meet the requirements specified in Paragraph 65 [in some Settlement Agreements 65A], all Low NOx Rebuild Kits shall include a label meeting the requirements of Paragraph 77.

68. Each engine manufacturer shall make available Low NOx Rebuild Kits for distribution and sale for Low NOx Rebuild Engines according to the following schedule:

- i. Beginning 180 days after the Date of Entry, or 90 days following ARB's approval of the Low NOx Rebuild Plan required in Paragraph 65 [in some Settlement Agreements 65A], whichever is later, each engine manufacturer shall begin supplying Low NOx Rebuild Kits.
- ii. Within 90 days following the applicable date in Paragraph 68(i), each engine manufacturer shall make available Low NOx Rebuild Kits in quantities necessary to meet expected demand for engine families representing at least fifty percent of the engines for which Low NOx Rebuild Kits must be produced under the Low NOx Rebuild Plan.

iii. Within 360 days following the applicable date in Paragraph 68(i), each engine manufacturer shall make available Low NOx Rebuild Kits in quantities necessary to meet expected demand for all engine families for which Low NOx Rebuild Kits must be produced under the Low NOx Rebuild Plan.

69. Beginning on the date a Low NOx Rebuild Kit is available for any engine family under the terms of Paragraph 68, each engine manufacturer shall sell and use, and authorize the sale and use of, only Low NOx Rebuild Kits for any Low NOx Rebuild Engine in that family in the case of any Engine Rebuild for:

(a) any HHDDE that has accumulated mileage greater than 290,000 miles, or any MHDDE that has accumulated mileage greater than 185,000 miles; or

(b) any HHDDE or MHDDE that has accumulated less than the applicable mileage specified in Paragraph 69(a), where the service event includes replacement or reconditioning of more than one Major Cylinder Component in all of the engine's cylinders.

70. A Low NOx Rebuild Kit may not increase any regulated emission beyond applicable limits when tested on the California Test Procedures.

71. Each engine manufacturer shall install, and shall authorize its authorized dealers, distributors, repair facilities, and rebuild facilities to install, only Low NOx Rebuild Kits as required under Paragraph 64 at no added cost to the owner above the amount the owner would otherwise pay to have the engine rebuilt or repaired. In addition, subject to the provisions of Paragraph 72 each engine manufacturer shall make available, either directly or through its affiliated distribution networks, at no added cost, the appropriate Low NOx Rebuild Kit to any non-affiliated engine rebuilder or person who requests it. For the purposes of this Section, "at no added cost" shall mean:

(a) if a Low NOx Rebuild Kit contains parts normally replaced at engine rebuild, an engine manufacturer shall not charge more than the then-current price for the original part; and

(b) if a Low NOx Rebuild Kit requires a part not normally replaced during rebuild, then such part shall be included without charge. Each engine manufacturers shall make arrangements to reimburse its authorized dealers, distributors, repair facilities, and rebuild facilities, so that the ultimate purchaser of a Low NOx Rebuild Kit will not be charged for any required reprogramming through its authorized dealers, distributors, repair facilities, and rebuild facilities, including any computer connection fees.

72. Notwithstanding the provisions in Paragraph 71 each engine manufacturer, its authorized dealers, distributors, repair facilities, and rebuild facilities may impose an additional fee for engine control software that includes both the low NOx reprogramming and other software enhancements for purposes unrelated to reducing NOx emissions, provided that:

- (a) The customer is given the option of obtaining Low NOx Rebuild reprogramming alone at no cost; and
- (b) The customer chooses the option that includes such other software enhancements.

73. Each Low NOx Rebuild Kit shall be clearly marked with an identifiable characteristic allowing the ARB to determine whether a Low NOx Rebuild Engine has been rebuilt with the appropriate Low NOx Rebuild Kit. This identifiable characteristic may be a unique part number or other marking on the engine control module, or may be a readily accessible software identification parameter, including engine code marker or calibration marker.

74. Each engine manufacturer shall take all reasonable steps to inform its authorized dealers, distributors, repair facilities, and rebuild facilities about the requirements of this program and the availability of Low NOx Rebuild Kits, including, but not limited to, sending written notification to these entities within 120 days after each engine manufacturer's Low NOx Rebuild Plan is approved.

75. In addition to any requirement set forth above:

- (a) Each engine manufacturer shall include as part of its Low NOx Rebuild Plan, submitted under Paragraph 65 [in some Settlement Agreements 65A], the following:
 - (i) A description of each engine family to be covered by a Low NOx Rebuild Kit, including the Model Year, model, and such other information as may be required to identify the engines to be rebuilt with Low NOx Rebuild Kits, and any engine rating otherwise covered by the Low NOx Rebuild Program which each engine manufacturer has elected to exclude under the ten percent exclusion for low-volume ratings.
 - (ii) A list of all of each engine manufacturer's authorized dealers, distributors, repair facilities, and rebuild facilities who will install the Low NOx Rebuild Kits, and a statement that these persons will be properly equipped and instructed to install such kits.

(iii) A description of the procedure to be followed by non-affiliated engine rebuild facilities or persons to obtain Low NOx Rebuild Kits.

(iv) A description of the system by which each engine manufacturer will ensure an adequate number of Low NOx Rebuild Kits will be available to be installed by affiliated and non-affiliated engine rebuild facilities, including the method to be used to ensure the supply of Low NOx Rebuild Kits remains both adequate and responsive to engine rebuild facilities' demand.

(v) An example of the written notification to be sent to all of each engine manufacturer's authorized dealers, distributors, repair facilities, or rebuild facilities.

(b) Each engine manufacturer shall submit to the ARB, 30 days prior to the date any Low NOx Rebuild Kit will be made available, the following additional information:

(i) A statement of the NOx limits each Low NOx Rebuild Kit achieves, and a certification that these limits meet the limits applicable under Paragraph 65 [in some Settlement Agreements 65A], or, if an engine manufacturer asserts such limits cannot be achieved, the submissions required under Paragraph 66.

(ii) A copy of all necessary instructions to be sent to those persons who are to install Low NOx Rebuild Kits. This shall include designation of the date on or after which the Low NOx Rebuild Kits will be available from an engine manufacturer and the time reasonably necessary to perform the labor required to install the kits.

(iii) A description of the impact of the proposed changes on fuel consumption, driveability, and safety for each class or category of Low NOx Rebuild Engines and a brief summary of the data, technical studies, or engineering evaluations which support these conclusions.

76. The written notification to be sent to each engine manufacturer's authorized dealers, distributors, repair facilities, and rebuild facilities shall contain the following:

(a) A copy of ARB's letter to rebuild facilities regarding the use of Low NOx Rebuild Kits.

(b) A clear description of actions that will be taken in the rebuild and an identification of the components that are affected by the Low NOx Rebuild.

(c) A description of the procedures which non-affiliated engine rebuilders should follow to obtain appropriate Low NOx Rebuild Kits and the time reasonably necessary to perform the labor required to install the appropriate Low NOx Rebuild Kit.

77. The Plan for each engine manufacturer's Low NOx Rebuild Program submitted to the ARB shall provide that any of each engine manufacturer's authorized dealers, distributors, repair facilities, or rebuilders who install a Low NOx Rebuild Kit shall be instructed to complete and affix a label to the engine. The label shall contain a statement with appropriate blank spaces for the rebuilder to indicate when and by whom the Low NOx Rebuild Kit was installed on the engine. The label shall be placed in such location as approved by the ARB consistent with California law and shall be fabricated of a material suitable for the location in which it is installed and not readily removable intact engine manufacturers shall also provide such label to any non-affiliated engine rebuilder who installs one of its Low NOx Rebuild Kits and instructions on how to complete the label and where to affix the label.

78. The ARB, in consultation with EPA, shall review the Low NOx Rebuild Plan prepared by engine manufacturers. This may be the same plan prepared by each engine manufacturer and submitted to EPA to meet the requirements of Paragraph 78 of the Consent Decree. The ARB shall provide each engine manufacturer with notice of approval or disapproval of its Low NOx Rebuild Plan within 30 days of its submittal to the ARB. If the Plan is disapproved, the ARB shall provide the reasons for disapproval, and an engine manufacturer shall have 30 days to submit a revised Low NOx Rebuild Plan for approval. Any dispute solely between the ARB and an engine manufacturer regarding the Low NOx Rebuild Plan shall be resolved in accordance with [the Dispute Resolution Process described in] Section XXX of this Settlement Agreement. Each engine manufacturer shall implement the Plan as approved. Any dispute involving a conflict between modifications requested by the United States and modifications requested by the ARB shall be governed by the dispute resolution provisions of Section XVI of the Consent Decree as provided in Paragraph 160B of this Settlement Agreement.

79. Each engine manufacturer shall send to the ARB a copy of all written communications directed to five or more persons which relate to the Low NOx Rebuild Plan directed by an engine manufacturer to engine rebuilders and other persons who are to install Low NOx Rebuild Kits under the Low NOx Rebuild Plan. Such copies shall be mailed to the ARB contemporaneously with their first transmission to engine rebuilders and other persons who are to install Low NOx Rebuild Kits under the Low NOx Rebuild Plan.

80. Each engine manufacturer shall provide for the establishment and maintenance of records to enable the ARB and each engine manufacturer to monitor the implementation of the Low NOx Rebuild Program. The records shall include the following:

- (a) the number of engines that will be subject to Low NOx Rebuild; and
- (b) a cumulative total of the number of Low NOx Rebuild Kits sold, by part number.

81. Each engine manufacturer shall maintain in a form suitable for inspection, such as computer information storage devices or card files, lists of the names and addresses of engine rebuilders who were provided Low NOx Rebuild Kits and the number of kits provided. The records described in this Paragraph shall be made available to the ARB upon request.

82. The records required by this Section shall be retained in accordance with the provisions of [Access To Information And Retention Of Documents contained in] Paragraph 142 (Record Retention) of this Settlement Agreement. Each engine manufacturer's obligations under Section IX.B shall terminate 10 years from the date of introduction of the first Low NOx Rebuild Kit pursuant to Paragraph 68(i). Each engine manufacturer accepts as a condition of such termination that, after termination, an engine manufacturer will only make available for Engine Rebuilds on Low NOx Rebuild Engines the software and/or minor hardware that corresponds to the Low NOx Rebuild Kit described in Paragraphs 64 through 67 and that complies with Paragraphs 70 and 73.